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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/305,313	05/05/1999	TAKAHIRO MATSUURA	862.2821	1944

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EXAMINER	
LAROSE, COLIN M	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/305,313	Applicant(s) MATSUURA, TAKAHIRO	
	Examiner Colin M. LaRose	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9 and 11-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9 and 11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 23 April 2004 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 9, and 17 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3-6, 9, 11-14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,136,401 by Yamamoto et al. ("Yamamoto") in view of Murakami.

Regarding claims 1, 9, and 17, Yamamoto discloses an image processing method/product/apparatus (figure 1) for performing the steps of:

detecting an image area excluding a frame image contained in an inputted image (inner frame area detecting circuit 6 (viz. 91, figure 9): detects area inside frame, such as the area that includes "D" and "F" in figure 2B);

generating correction information of the detected image area (inner frame area detecting circuit 6 (viz. 92, figure 9) outputs an "area color signal," which is used as correction information);

correcting the image area based on the generated correction information (image layout circuit 7 uses the "area color signal" to correct the area within the frame);

wherein, in said detecting step, the frame image, which has gradation, is detected by using a detection method that detects pixels by determining whether or not a pixel of interest and pixels adjacent to the pixel of interest have a same hue (figure 8B: the pixels in the image are classified as having one of four hues (yellow, green, blue, and red) by the inner frame area detecting circuit 6), and recognizes the frame by determining the consecutiveness of the positions of the detected pixels (color frame discriminating circuit 6 recognizes frames that comprise loops of consecutive pixels, as shown in figures 2B, 20, and 21).

Yamamoto does not expressly disclose that the pixels of the image (i.e. the pixel of interest and any adjacent pixels) are determined to have a difference between lightness and saturation having a predetermined value or less.

As shown in figure 8B, pixels classified as red, yellow, green, or blue must have a certain minimum amount of saturation (the saturation being represented by the radial distance from the origin). However, there is no mention of the pixels having a difference between lightness and saturation being a predetermined value or less.

Murakami discloses an image processing system, wherein a reference color is designated, and pixels of interest within an image are compared to the reference color to determine if the pixels of interest are substantially the same color as the reference color.

In particular, Murakami calculates a difference between each of the hue, saturation, and lightness values of the reference color with the hue, saturation, and lightness values of the pixel of interest. The pixel of interest is considered to match the reference color if the reference color and the pixel of interest have the same hue (i.e. the difference in hues is substantially small), and the differences between lightness and saturation are a predetermined value or less (i.e. the differences in lightness and saturation are substantially small). In column 10, lines 1-13, dH, dS, and dL are calculated, and in column 12, lines 37-60, the values are compared to predetermined thresholds to determine if the color of the pixel of interest and the reference color are the same.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Yamamoto by Murakami to achieve the claimed invention by computing the difference in hue, lightness, and saturation values of each of the pixels in the image and the four frame colors (red, blue, green, and yellow) in order to classify each of the pixels as one of the four frame colors, since Murakami shows that matching a pixel to a reference color is conventionally achieved by a comparison of the hue, lightness, and saturation values of the pixel and the reference color, and Murakami's classifying of pixel colors by direct comparison to the reference color would achieve substantially the same results as Yamamoto's method of simply partitioning the color space in order to classify the pixels by color.

In other words, Murakami and Yamamoto are functionally equivalent methods of classifying pixels by color since both methods classify a pixel of interest as matching a reference color when the pixel of interest is substantially close to the reference color (i.e. within a certain tolerance range of the reference color).

Regarding claims 3 and 11, Yamamoto discloses identifying the image area other than the frame image based on a detection result of the pixel constructing the frame image (inner frame area detecting circuit 6 (viz. 91, figure 9) identifies area inside frame) and supplying information representing the identified image area to the generator and corrector (inner frame area detecting circuit 6 (viz. 91, figure 9) supplies detected area information to the generator (92, figure 9) and the corrector (7, figure 1)).

Regarding claims 4 and 12, Yamamoto discloses detecting comprises scanning the image in the horizontal direction in units of columns and detecting, as two ends of the image area in the horizontal direction, a first column having a pixel determined not to construct the frame image and a next column having a pixel determined to construct the frame image (column 11, line 66 through column 12, line 4: Yamamoto sequentially scans the image to determine the metes and bounds of the frame image; the image is in raster format (i.e. rows and columns of pixels), so detecting a left or right edge of the frame comprises detecting a pixel in a first column that constructs the frame and a pixel in a second column that does not construct the frame).

Regarding claims 5 and 13, Murakami discloses detecting comprises scanning the image in the vertical direction in units of rows and detecting, as two ends of the image area in the vertical direction, a first row having a pixel determined not to construct the frame image and a next row having a pixel determined to construct the frame image (column 11, line 66 through column 12, line 4: Yamamoto sequentially scans the image to determine the metes and bounds of the frame image; the image is in raster format (i.e. rows and columns of pixels), so detecting a top or bottom edge of the frame comprises detecting a pixel in a first row that constructs the frame and a pixel in a second row that does not construct the frame).

Regarding claim 6 and 14, yamamoto allows for re-execution of identification processing of an image area other than the frame after correction has ended for situations in which further correction is desired. The detector in Murakami's disclosure is part of an application stored in a computer that is able to re-identify and reprocess image areas an arbitrary number of times.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto and Murakami in view of Kawata.

Regarding claim 7, 8, 15 and 16, Murakami teaches performing sharpness processing on the detecting image area.

Murakami is silent to generating, as correction information, highlight and shadow portions and white and black balances, and using said highlight and shadow points and white and black balances to correct the image.

Kuwata discloses generating, as correction information, highlight and shadow portions (column 9, lines 42-52) and white and black balances (figure 18) to be corrected or adjusted, and then correcting the gradation of an image area based on highlight and shadow points (column 26, lines 43-67) and black and white balances (figures 22-23).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Murakami by Kuwata to include correcting the image portion according to

highlight/shadow points and black/white balance since Kuwata that performing the claimed corrections improves image quality.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colin M. LaRose whose telephone number is (703) 306-3489. The examiner can normally be reached Monday through Thursday from 8:00 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is (703) 306-0377.

CML
Group Art Unit 2623
25 June 2004

AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600